

IN THE CLAIMS:

1-34. (canceled)

35. (currently amended) An implantable multi-chamber pacing system, comprising:

an implantable cardiac rhythm management device including means for sensing atrial signals of a patient's heart and means for sensing ventricular signals of both ventricles of a patient's heart;
a coronary sinus lead adapted to be coupled to the cardiac rhythm management device;

means carried on the coronary sinus lead for both producing a signal representative of blood flow velocity through the coronary sinus and for delivering pacing pulses and sensing electrical cardiac activity; and
means within the cardiac rhythm management device for analyzing the sensed ventricular signals, the sensed atrial signals and the coronary sinus blood flow velocity signal to provide an output signal in response to a decrease in blood flow velocity through the coronary sinus followed by an increase in elevation of an ST segment of a waveform derived from at least one of the sensed ventricular signals and the sensed atrial signals; and
means within the cardiac rhythm management device responsive to the output signal for delivering therapy to the patient's heart as a function of sensed electrical activity of a patient's heart and coronary sinus blood flow velocity.

36. (canceled)

37. (previously presented) The pacing system of claim 35 wherein the analyzing means analyzes the coronary blood flow velocity signal to detect a reduced blood flow velocity indicative of a myocardial ischemia cardiac condition

and wherein the therapy delivery means comprises means for dispensing a therapeutic drug when a myocardial ischemia cardiac condition is detected.

38. (previously presented) The pacing system as described in claim 37, comprising programmer means for programming the implantable cardiac rhythm management device via a wireless telemetry link.

39. (previously presented) The pacing system as described in claim 37, wherein the implantable cardiac rhythm management device further comprising defibrillation means for generating and providing a defibrillation pulse to the patient's heart.

40. – 51. (canceled)

52. (new) A pacing system according to claim 35, further comprising:
means responsive to the output signal for one of delivering an alarm notification to the patient and beginning drug therapy,
wherein the blood flow velocity consists of a mean blood flow velocity calculated over a relatively extended period of time.

53. (new) A pacing system according to claim 52, wherein a programmable flow rate threshold triggers the means responsive.

54. (new) A pacing system according to claim 53, wherein the programmable flow rate threshold is measured in milliliters per minute.

55. (new) A pacing system according to claim 53, further comprising:
wherein the blood flow velocity consists of a mean blood flow velocity calculated over a relatively extended period of time, and

wherein the programmable flow rate threshold is measured in milliliters per minute and said threshold consists of a percentage drop from one of a maximum of the mean flow rate and an acute percentage drop from a prior flow rate.

56. (new) A pacing system according to claim 35, wherein in the event that a sharp decrease in mean blood flow velocity through the coronary sinus is followed closely by a marked increase in elevation of an ST segment of a waveform derived from at least one of the sensed ventricular signals and the sensed atrial signals, the output signal includes a declaration that both an occlusion-due-to-thrombus and that an impending myocardial infarction is likely.